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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,787	08/08/2006	Takamasa Harada	514453-3966	7575

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EXAMINER	
SHALLENBERGER, JULIE A	

ART UNIT	PAPER NUMBER
2885	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/565,787	HARADA ET AL.	
	Examiner	Art Unit	
	Julie A. Shallenberger	2885	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2007 and 07 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____is/ are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to the amendment filed 10/24/07 and the supplement amendment filed 1/7/08 which have been entered.

Claim Objections

Claim 1 is objected to as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship of the prism pattern is not described in relation to the other claimed structural elements of the surface light source.

The claim has been examined as best understood.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5, 6, 8, 9, 11, and 12 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeon (6,729,737) in view of Harada (JP 2003-202415) and further in view of Funamoto (JP 11-250714).

Jeon teaches a surface light source device with a light guide 140 with a prism pattern 141 (figure 5A), a reflection surface 150 provided on the reverse side of the light guide, and a diffusion sheet 160, but lacks the teaching of a diffusing film provided

beside the light output surface of the light guide with a columnar structure of 2 phases with different refractive indices with greater indices extending in the direction of the thickness of the film and the columnar structure being inclined at angles between 5 and 60 degrees or a point light source.

Harada teaches a diffusing film with a columnar structure of 2 phases with different refractive indices which, vary gradually [0022] along the thickness at inclined angles between 5 and 60 degrees [0010] and vary gradually along the axis line of the columnar structure (claims 5 and 8 - see figure 3B and [0022]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Harada's diffusing film in place of Jeon's diffusing film in order to improve the brightness so that a wider viewing angle may be obtained.

In regard to the limitation stating " wherein the prism pattern has a directionality, which is liable to cause radial patterns of unevenness in the brightness of the surface light source" and the film provided "in such a way that the direction of the diffusion of the directional light-diffusion film is in the same direction as the direction of the unevenness in brightness", the applicant is advised that these limitations do not add structure to the claims and are merely functional limitations. The applicant is advised that, while the features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 44 USPQ2d 1429. In addition, it has been held by the courts that apparatus claims cover what a device is, not what a device does. *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525 (Fed. Cir. 1990). In this

case, the patented apparatus of Jeon in view of Harada and further in view of Funamoto discloses (as detailed above) all the structural limitations required to perform the recited functional language, therefore were considered to anticipate the claimed limitations.

Funamoto teaches the use of a point light source (cl. 1) that is positioned in the center of the end surface of a light guide (cls. 6 and 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a point light source in order to provide a longer lasting light source and to increase the power efficiency of the lighting device.

In regard to claims 11 and 12 which recites " the device produces little unevenness in brightness when viewed from an oblique direction". the applicant is advised that these limitations do not add structure to the claims and are merely functional limitations. The applicant is advised that, while the features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 44 USPQ2d 1429. In addition, it has been held by the courts that apparatus claims cover what a device is, not what a device does. *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525 (Fed. Cir. 1990). In this case, the patented apparatus of Jeon in view of Harada and further in view of Funamoto discloses (as detailed above) all the structural limitations required to perform the recited functional language, and therefore were considered to meet the claimed limitations.

Claims 2-4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeon, Harada, and Funamoto, as applied to claim 1 above, in view of Shigematsu (JP 2003-075611).

Jeon, Harada, and Funamoto teach the invention described above, but lack the teaching of a light diffusing adhesion agent with microparticles.

Shigematsu teaches a light diffusing adhesion agent with microparticles.

The use of adhesives are well known in the art and providing such a medium between the diffusing film and the light guide is common since the air layer would decrease the overall efficiency, therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the adhesive taught by Shigematsu to bond the diffusing film to the light guide in order to increase efficiency of the surface light source device.

In regard to the particle size and refractive indices, Shigematsu teaches the use of non-sublety particles with a diameter of 1-5 micrometers (cl. 2), another example of titanium oxide with a refractive index greater than 1.8 and diameter of 10-50 nm (cl. 3), and a further mentions the refractive index of non-subtlety particles may exceed 1.6 (cl. 4). These particle sizes and refractive indices are all well known in the art and It would have been obvious to one of ordinary skill in the art at the time the invention was made to use in the adhesive in order to increase the light diffusion and overall efficiency of the surface light source device.

In regard to claim 14, Shigematsu teaches particles between 1 and 5 micrometers [0027] and a refractive index greater than 1.6 [0026].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to been obvious to one of ordinary skill in the art at the time the invention was made to make the particles between 1 and 5 micrometers and a refractive index greater than 1.6, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

Claims 7, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeon, Harada, and Funamoto, as applied to claim 1 above, in view of Karanaru (JP 2003-121656).

Jeon, Harada, and Funamoto teach the invention described above, but lack the teaching of the light emitting unit positioned facing an angled end surface of the light guide and the directional light-diffusing film being directed towards the angle facing the light emitting unit.

Karanaru teaches a light emitting unit positioned facing an angled end surface of the light guide and the directional light-diffusing film being directed towards the angle facing the light emitting unit (cls. 7 and 10 - see figures 1, 2, and 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to position the light source at an angled edge of a light guide as taught by Karanaru with the light-diffusing film directed towards an angle facing the light emitting unit in order to optimize the diffusion of light throughout the light guide.

In regard to claim 13, which recites " the device produces little unevenness in brightness when viewed from an oblique direction". the applicant is advised that these limitations do not add structure to the claims and are merely functional limitations. The applicant is advised that, while the features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 44 USPQ2d 1429. In addition, it has been held by the courts that apparatus claims cover what a device is, not what a device does. *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525 (Fed. Cir. 1990). In this case, the patented apparatus of Jeon, Harada, and Funamoto, in view of Karanaru discloses (as detailed above) all the structural limitations required to perform the recited functional language, and therefore were considered to meet the claimed limitations.

Response to Arguments

Applicant's arguments filed 10/24/07 and 1/7/08 have been fully considered but they are not persuasive.

In response to the argument that Jeon and Harada are silent to the problem of radial patterns of unevenness in the brightness of a surface light source caused by the directionality of the prism pattern, the applicant is advised that such limitations are functional and do not distinguish the claimed structure from the prior art.

In response to the argument that the combination of Jeon in view of Harada would be rendered inoperable in view of the combination, the applicant has failed to disclose how or why the combined device would be inoperable.

In regard to the "no apparent likelihood of success" for using a point light source as taught by Futamoto, the applicant is advised that the use of point light sources (ie LEDs) is well known in the art for increasing the efficiency of a lighting device while providing a low cost source of illumination. The likelihood of success in using point light sources is well known in the art for numerous lighting devices.

In response to applicant's argument that Shigamatsu provides no suggestion to use a light diffusion adhesion agent with particles in a surface light source as claimed, the applicant is advised that suggestion or motivation to modify a prior art structure can be found in a reference, or reasoned from common knowledge in the art, scientific principles, art recognized equivalents, or legal precedent. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, particles added to an adhesive agents are well known for diffusive purposes and the abstract is sufficient evidence to teach the diffusion particles in an adhesive, however for further support please refer to [0055]. In addition, Shigamatsu teaches the use of light diffusion adhesion agent with particles in an LCD device which is a well known application of surface light source devices.

In response to applicant's argument that Kanaru provides no suggestion to use a light source positioned at an angled end surface of the light guide with the surface light source device as claimed, the applicant is advised that suggestion or motivation to

modify a prior art structure can be found in a reference, or reasoned from common knowledge in the art, scientific principles, art recognized equivalents, or legal precedent. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the light source at an angled edge of a light guide as taught by Karanaru with the light-diffusing film directed towards an angle facing the light emitting unit in order to decrease the size while optimizing the diffusion of light throughout the light guide.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie A. Shallenberger whose telephone number is (571)272-7131. The examiner can normally be reached on Monday - Friday 830-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jong-Suk (James) Lee can be reached on 571-272-7044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JAS
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JONG-SUK (JAMES) LEE
SUPERVISORY PATENT EXAMINER